

No. 11.

REPORT OF WM. OGILVIE.

EXPLORATION SURVEY OF THE YUKON RIVER DISTRICT. 1887.

SIR,—I have the honor to submit the following preliminary report of the operations of my exploration survey of the Yukon River District.

In accordance with your instructions, dated the 16th of April, 1887, I left Ottawa on April the 20th and arrived in Victoria, B.C., on the 2nd of May. I at once proceeded to make arrangements for travelling to the scene of my survey, and hired six men to accompany me, three being required for the survey proper and three for transporting supplies.

We left Victoria on the afternoon of the 12th of May, on the Pacific Steamship Company's steamer "Ancon," which was so heavily laden that I had considerable difficulty in persuading the captain to take on board my freight and party.

Our trip was a very slow one, we did not reach Juneau City, Alaska, until the night of the 19th of May, and next day the steamer, instead of going to Chilkoot, as we had understood she would do, proceeded to Sitka, where we remained for a day. Part of another day was spent at Kilisnoo, so that we did not arrive at Chilkoot until the 24th of May.

At this point I made preparations for commencing my survey, but owing to wet, stormy weather three days were lost. I then got the survey started from Pyramid Island, in Chilkoot Inlet, a point determined by the United States Coast Survey.

From this point I carried the survey across the inlet, and thence up it, and Taiya Inlet, and the valley of the Taiya River, to the Chilkoot or Taiya Pass through the coast range of mountains.

I here detailed one of my party (Captain Moore) to explore a pass a short distance south of the Chilkoot Pass; this route leaves Taiya Inlet about two miles from its head and follows up the valley of the Skagway River to its source, and thence down the valley of a stream which empties into Lake Tahko.

Captain Moore reports this pass as being much lower than the Chilkoot Pass, and he thinks it is not any higher at the summit than Lake Lindeman. It is timbered throughout, and he estimates the distance from tide water to the summit at eighteen miles, and from the summit to Lake Tahko at about twenty-two to twenty-four miles. He has had considerable experience in mountain trails, having built the Government trail in Cassiar district, British Columbia, and he thinks a trail could be built through this pass much more easily than the one constructed in Cassiar district, and a waggon road more easily than the one constructed through the canyon of the Fraser River.

I believe that this pass has not been named, and think that the party I sent through were the first white men who ever travelled through it; I have therefore taken the liberty of naming it the "White Pass," after the Honorable the Minister of the Interior, and I hope the name will be retained.

Some seventeen miners passed into the interior by the Chilkoot Pass while I was in that vicinity.

The Chilkoot Indians claim the exclusive privilege of packing goods over Chilkoot Pass, and they demanded \$20 per hundred pounds to transport my supplies from the head of tide water to the head of the Lewis River. I made an agreement with them to pack my outfit and supplies to the summit of the Pass for \$10 per hundred pounds, and from there I arranged with my own party, assisted by some interior

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Canadian Indians, to transport our goods to the lakes, at a cost of \$3 per hundred pounds, making a total cost of \$13 per hundred pounds for the same distance for which the Chilkoot Indians wanted \$20.

To assist in moving supplies, &c., I purchased some sledges on the Taiya River. Fortunately for the success of this expedition the United States steamer "Pintra" was lying at the head of the inlet when I arrived, and her commander, Captain Newell, showed me every kindness and consideration, and did everything in his power to make things smooth with the Indians. He saw "Clenat," the chief of the packers, several times, and told him that though he had not the power to fix his prices for packing, he thought he was charging too much, and that it would result in his losing his carrying trade, as he would force white men to seek some other route into the interior.

He also told him that he must not in any way interfere with white men doing their own packing, as he was reported to have done, or molest any of those whom they might employ to pack for them, and assured him that I had a permit from Washington to pass safely through the country, and that he would see that I did so.

Captain Newell promised me that his vessel would remain at the head of the inlet until he heard that the Indians had satisfactorily carried out their agreement, and had returned to the inlet.

By the 8th of June my supplies and outfit were all carried to the summit of the Chilkoot Pass; the weather then became stormy and the Indians would not work for some days, so that it was the 27th of June before I got everything down to the first lake.

I tried packing with my own party, and succeeded in getting a quantity of supplies down, but the soft wet snow soon used the men up; at one time only two men and myself were fit to do anything. I worked as hard as any of them, but was better provided with footwear.

A good deal of difficulty was experienced in carrying the survey across the mountains, but I am glad to say it was successfully accomplished. I had, however, to use some very long sights, one of which was six miles in length. In these cases I used a long base for the micrometer measurements (in the case cited one of 188 links was used), and it is gratifying to note that the length deduced from the long base differed very little from that given by the 20 link base.

I find the distances, altitudes and descriptions of the Chilkoot Pass, as given by Schwatka, considerably in error, and the dangers described by him rather fanciful; the most disagreeable things we experienced in travelling through the pass were the rain and snow which fell almost continuously while we were there.

Beginning from the summit of Chilkoot Pass we descend about one-third of a mile to Crater Lake, the fall in that distance being by barometer 367 feet. At four and one-half miles from the summit Mountain Lake, which is about one and a half miles in length, is reached, the fall in this distance being about 575 feet. At this point the first trees on the north-east side of the summit are seen, but they are of no importance, being small and of stunted growth.

About one hundred yards from Mountain Lake, Canyon Lake is reached. This lake is about one mile long, and there is quite a stream running out of it, which flows for some distance through a narrow canyon with a very rapid fall and empties into Lake Lindeman.

At the foot of Canyon Lake we get into what may be called timber. The trees are small, but numerous, and consist chiefly of spruce, pitch-pine and balsam. They are, however, of very little use except for fuel.

At twenty-three and a-half miles from salt water we reach Lake Lindeman. The distances between this point and the head of canoe navigation, as determined by me, are as follows, expressed in miles and decimals of a mile:—

	MILES.
From head of inlet to—	
Head of canoe navigation.....	6.00
Forks Taiya River.....	8.30
Summit of pass.....	15.10
Landing on Lake Lindeman.....	23.75

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From the summit to Lake Lindeman there is a descent, approximately, by my barometer observations, of 1,237 feet.

I append the readings of the barometer from salt water up to the summit of Chilkooot Pass, and during three days at the summit. There are no simultaneous readings at the coast, which leaves the correct altitude, as far as it can be determined by my barometer readings, a matter of uncertainty; but while making the survey from the head of canoe navigation on the Taiya River, I took the angles of elevation of each station up to the summit, and the angles of depression from the station at the summit down to Lake Bennet, so that I can from these determine very closely the altitude of the summit. This I have not yet had time to do, but will do so when I go into winter quarters.

On the 12th of July I had finished all my preparations for the descent of the river, and started the survey proper from the point on Lake Lindeman above mentioned. This lake is about five miles long, about four of which lie on the line of travel into the interior.

At twenty-eight and one-half miles from salt water we reach the head of Lake Bennet, of Schwatka. Between it and Lake Lindeman there is a portage of about three-quarters of a mile in length, the river being rough, narrow and crooked.

The upper end of Lake Bennet is bounded by high mountains, and there is some timber near the head of the lake, then little or none except in the ravines, until the middle of its length is reached, when the lake widens out to about twice the width of the upper end. Here we find flats and valleys; in the latter numerous large spruce trees were noticed, but they are covered from the ground up with large limbs which render them almost unfit for use.

About eighteen miles down Lake Bennet we reach the mouth of a large arm of the lake. It extends in a south-westerly direction, and is said by the Indians to head about fifteen miles away in the glacier, from which the westerly fork of the Taiya River takes its source. At its junction this arm of the lake is about one mile wide, and as far as could be seen up it (about eight miles) it is bordered by high mountains. This arm is named by Schwatka on his map the "Wheaton River."

There is little or no timber of any value at the lower end of Lake Bennet, where there is an extensive sandy flat, called by the miners, "Cariboo Crossing."

A short distance below Lake Bennet we enter Lake Nares, as named by Schwatka. This lake is shallow, with muddy flat shores on the west side, covered with small scrubby timber. On the east side, the bank is higher and the timber of better quality; but there is none of commercial value, even were there a cheap way of getting it out.

Passing through Lake Nares and Bow of Schwatka, the latter really a part of Tahko Lake, we reach the mouth of the "windy" arm of Tahko Lake, which I understood the Indians to call Takone.

Seventy-four and a-half miles from salt water, we reach the lower end of Tahko Lake, and reach what may be called the river proper. Here it has the volume and character of a river, being about 200 yards wide and from 6 to 12 feet deep. The country bordering the river is low.

At 79½ miles we reach Lake Marsh of Schwatka and Lake of the Mines. The immediate shore on the west side of this lake is flat and swampy, with some small timber, and the water near this shore is shallow. The easterly shore appears to be better, the hills rise at once from it and slope gently back to the mountains. On the west side it is often many miles back from the lake before a hill of any height is reached.

We enter the river again at 79 miles from salt water. The country along the shores is hilly, sometimes rocky, and covered with small timber, consisting chiefly of spruce, poplar, pitch pine and birch, but very little of it is fit for anything but fuel.

The river is from 150 to 200 yards wide, with a current of about four miles an hour; it is generally very crooked.

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At 125 miles from salt water, the canyon is reached. At this point the river flows through a fissure in a barrier of basaltic rock, which intersects its course.

The canyon proper is about five-eighths of a mile long and about 100 feet wide, with perpendicular walls from 60 to 80 feet high. The current through it is swift, and the water rough, but with a fairly large boat the only risk in running through it would be from contact with the sides, in which case one would be certain to come to grief. The passage through is made in from three to four minutes. About half way through the canyon there is a basin of about one-eighth of a mile in length and the same in width.

Below the canyon the river assumes its original character, the banks being low, sandy and gravelly flats. The river is shallow and rapid, with a few scattered boulders, which do not appear above the water, but are too high to allow of boats passing safely over them.

The canyon and its rapids are altogether two and three-quarter miles long. The last rapid, which is three-eighths of a mile in length, is a bad one, and we had to portage everything round it, and let our boat down with ropes from the shore. This rapid is called by the miners the "White Horse," from the fact that nearly all the water is white with foam. Several parties have run through the rapid on rafts, and one or two in boats, but few want to repeat the trip.

The total fall from the head of the canyon to the foot of the "White Horse" rapid, is thirty-two feet (deduced from the angles of elevations of each station from the preceding or succeeding one.)

At 142½ miles from the head of the inlet, the Tahkheena River flows into the Lewis from the south-west; at the junction it appears nearly as large a river as the Lewis.

The water of the Tahkheena is quite muddy, and it changes the color of the water in the Lewis for some distance below its entrance.

Looking up the valley of the Tahkheena from its mouth, many snow-covered mountains are seen; but in the immediate vicinity of the main river the surrounding hills and ridges are principally gravel and sand, covered with small poplar and spruce.

One hundred and fifty-five and a-half miles brings us to Lake Lebarge, which is 31½ miles long, and ranges from about two to four and a-half miles in width.

The general character of the river valley, from the canyon to Lake Lebarge, is hilly; the hills close to the river consisting mostly of sand and gravel bluffs, with rocks and mountains in the distance.

The easterly shore of Lake Lebarge is generally rocky and steep, in many cases we might say mountainous. The hills on the westerly shore are lower and are better timbered, and the rocks are of a more shaly nature.

The junction of Newberry River (Hoot-alinqua of rivers) which flows from the south-east, and the Lewis, is reached at 219½ miles from tide water.

From the foot of Lake Lebarge to this point the Lewis is narrow and swift, in many places amounting almost to rapids; the valley is narrow with high rocky hills on both sides.

The water of the Newberry is a dark brown, while that of the Lewis is blue; half a mile below the junction two-thirds of the water of the combined streams is brown, and at a mile it is all brown, and hardly distinguishable from the water of the Newberry.

Thirty-four miles below the mouth of the Newberry and 253½ miles from salt water, the Big Salmon River enters the Lewis from the east. This river is about 100 yards wide and is shallow at the mouth, its size would not seem to indicate any great length. Looking up the valley of the Big Salmon a distant view is had of many mountain peaks covered with snow, the presence of which at this season of the year is proof of considerable altitude.

The Little Salmon River enters the Lewis from the north-east 36½ miles below the mouth of the Big Salmon; it is about 60 yards wide at its mouth and the water is shallow with very little current.

At 350 $\frac{1}{2}$ miles from the head of the Inlet Rink, rapids are passed. These rapids were named by the early miners on the river the "Five Fingers," from the fact that five masses of rock stand in mid-channel and cause the rapid.

The river at this point has forced its way through a barrier of very coarse conglomerate rock, which appears to be of very recent geological age. This formation is also seen along the river for some distance above and below the rapid. About six miles above the rapid I found a seam of coal on the bank of the river associated with a soft sandstone bearing many plant impressions.

About six miles below Rink Rapids, what Schwatka calls the Small Rapids are reached. At this point a soft shale crops out with traces of lignite through it.

Neither Rink Rapids nor the latter mentioned Small Rapids would be much obstruction to steamboat navigation; they might cause a little delay during high water, and at that time Rink Rapids might have to be "lined" up by boats of small power.

The Pelly River which flows into the Lewis at Fort Selkirk, 410 miles from the Inlet, was reached on the morning of the 13th of August, and at this point I met Dr. Dawson, of the Geological Survey, who had arrived on the 11th.

The volume of the Pelly River at its mouth is apparently less than the Lewis, and it is only about 200 yards wide, whereas the Lewis is from 400 to 600 yards in width above its confluence.

GENERAL REMARKS.

On all the length of the Lewis River very little timber that would be serviceable for building boats of any size can be found, on some of the islands below the mouth of the Newberry, a few trees of fair size could be had, some were seen which were from 12 to 18 inches in diameter, but I noticed none exceeding 2 feet; they are very tall and straight.

MINES AND MINING.

I believe that valuable leads of quartz will be found in the upper waters of the rivers, but as yet no thorough search for such has been made. One prospector found quartz on one of the upper lakes which he had assayed in San Francisco; it yielded \$8.88 of gold per ton, and 92 cents of silver.

Gold is found almost anywhere on the bars and banks along the Lewis below the mouth of the Newberry. One miner who had prospected the latter mentioned stream told me he found numerous diggings which would yield \$10 per day, but that is not considered pay in this country, owing to the shortness of the season and the cost of getting in and out.

On the Lewis many diggings have been located which would yield more than \$10 a day with proper appliances, but prospectors hurry further down to find richer diggings, or coarser gold as they call it.

At Forty-Mile Creek, so called from the fact of its being forty miles below Fort Reliance, coarse gold has been found. Some of the miners at this point have been very successful, one party I met took out \$1,100 worth of gold in eleven days, and another \$300 worth in a day and a half, but many did not get enough to cover expenses.

Some miners I met at Cassiar-bar (27 $\frac{1}{2}$ miles below the mouth of the Newberry) took about \$6,000 worth of gold out of it last year in thirty days, they said it yielded \$30 a day per man, which for "pan" and "rocks" washing is a very large return.

I have no doubt that many such bars will be found on the Newberry and Lewis, but at present Forty-Mile Creek is all the cry and very few miners remain on the upper river.

There are this season about three hundred miners in the country, of which number about two hundred and fifty are working at Forty-Mile Creek.

One old and experienced miner whom I met told me that he had never seen any country in which the indications were more promising, and that he was satisfied some very "rich finds" would yet be made in our territories.

All of which is respectfully submitted.

I have the honour to be Sir,

Your obedient servant,

WM. OGILVIE, *D.L.S.*

The Surveyor-General,
Department of the Interior,
Ottawa.

**BAROMETER Readings taken during the survey of the Taiay River and Pass,
Season 1887.**

Time.		Place.	Barometer Readings.	Thermometer Readings.	Remarks.
Day.	Hrs. Ms.				
June 5...	Noon.....	A short distance above salt water or high tide and about 15 ft. above low tide.....	29.974	72	Clear and warm.
do 5...	7.20 p.m.	do do	29.725	56	
do 6...	7.20 a.m.	do do	29.948	62	
do 6...	9.30 p.m.	Head of canoe navigation, Taiay River.....	29.863	53	
do 7...	7.00 a.m.	do do	29.782	48	
do 7...	8.00 a.m.	do do	29.803	60	
do 9...	6.30 a.m.	In valley of canyon	29.220	56	
do 9...	10.00 p.m.	Sheep camp	28.791	49	
do 10...	6.00 a.m.	do	28.848	50	
do 10...	6.00 p.m.	do	28.860	57	
do 10...	8.45 p.m.	Near timber limit in Taiay Pass.	28.699	51	
do 11...	7.00 a.m.	do do	28.625	49	
do 11...	8.00 a.m.	At stone-house	28.399	54.5	
do 11...	8.50 a.m.	Entrance to upper canyon.	27.578	48	
do 11...	10.15 a.m.	Summit of Pass	26.330	46.5	
do 11...	7.35 p.m.	do	26.277	41	
do 12...	8.00 a.m.	do	26.264	40	Windy.
do 12...	2.00 p.m.	do	26.247	46	do
do 13...	Noon.....	do	26.129	38.5	Windy and rainy.

WM. OGILVIE,
Dominion Land Surveyor.

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